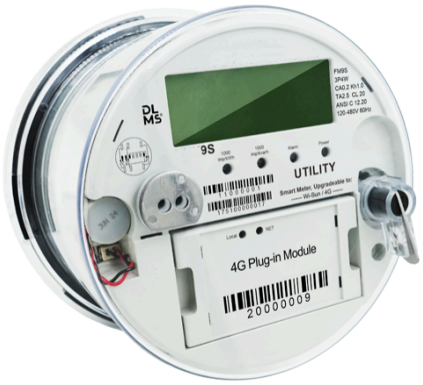
AETHEREDGE · ANSI FORM 9S

FM9S ANSI Smart Meter



Illustrative configuration. Nameplate and communication options are confirmed for the selected project.

The FM9S is a wide-range polyphase ANSI Type C12.20 smart meter (69–480V) engineered for precision revenue metering at CA0.2 accuracy. With robust anti-tamper protection, comprehensive power quality monitoring, and flexible plug-and-play communications on the DLMS/COSEM data model, the FM9S is built for utilities and commercial/industrial sites requiring high-accuracy metering across a broad voltage range.

NOMINAL VOLTAGE	BASIC / MAXIMUM CURRENT	ACCURACY CLASS
69 – 480 V	**2.5 A | 20 A**	**CA0.2**

Key features

- Plug-and-play communication module architecture
- Large LCD for at-a-glance meter status
- Non-volatile memory — no backup battery required to retain data
- Local and remote firmware upgrade support
- Anti-tamper design with full event logging
- Field-replaceable RTC battery
- UV-resistant transparent polycarbonate cover

Standards referenced

- ANSI C12.1
- ANSI C12.10
- ANSI C12.18
- ANSI C12.20
- IEC 62052-11 — Metering Equipment: General Requirements, Tests and Test Conditions
- IEC 62053-21 — Static Meters for Active Energy (Classes 1 and 2)
- IEC 62053-23 — Static Meters for Reactive Energy (Class 2 & 3)
- DLMS / COSEM — Device Language Message Specification / Companion Specification for Energy Metering

For configuration details and applicable compliance documentation, contact Archai.

METERING AND UTILITY OPERATIONS

Functions and communications

Measurements

- kWh / kvarh / kVAh (import, export, and absolute)
- Maximum kW / kvar demand (import, export)
- Cumulative kW / kvar demand (import, export)
- Instantaneous voltage, current, phase angle, active power, reactive power, and power factor
- Current date and time
- Frequency

Billing

- Automatic monthly billing reset at 00:00:00 on the 1st day of each month, fully configurable
- Manual billing reset via demand-reset button
- Remote billing reset from the AMI system
- Up to 12 months of billing data retained in meter memory

Load Profiles

- Up to 100 days of 15-minute load profiles across 16 channels, FIFO basis
- Load profile interval configurable from 1–60 minutes

LCD Display

- 8-digit LCD with 3 decimal places for power/demand and 2 for energy (programmable)
- Display area exceeds 14 cm², with 10 mm digit height
- Scrolling and manual (push-button) display modes

Tariff Functions

- Time-of-Use (TOU) metering of import/export energy (kWh, kvarh) and demand (kW, kvar) — up to 4 tariffs, 12 seasons, 8 weeks, 12 switch times, and 100 special days
- Up to 32 energy tariff and 32 demand tariff registers
- Battery or supercapacitor-backed clock and calendar

Power Quality

- Voltage unbalance detection
- Current-reversal detection
- Over-voltage and under-voltage detection with configurable thresholds
- Long- and short-duration outage detection with configurable thresholds
- Over-current detection with configurable thresholds
- All power quality events logged to non-volatile meter memory

Anti-Tamper

- Detection of cover removal, external magnetic field interference, and other tamper conditions
- Tamper alarms displayed on LCD and LED indicators
- All tamper events logged to meter memory

Communication

- Optical port compliant with ANSI C12.18
- Plug-and-play 4G / Wi-SUN communication module

ELECTRICAL AND MECHANICAL DATA

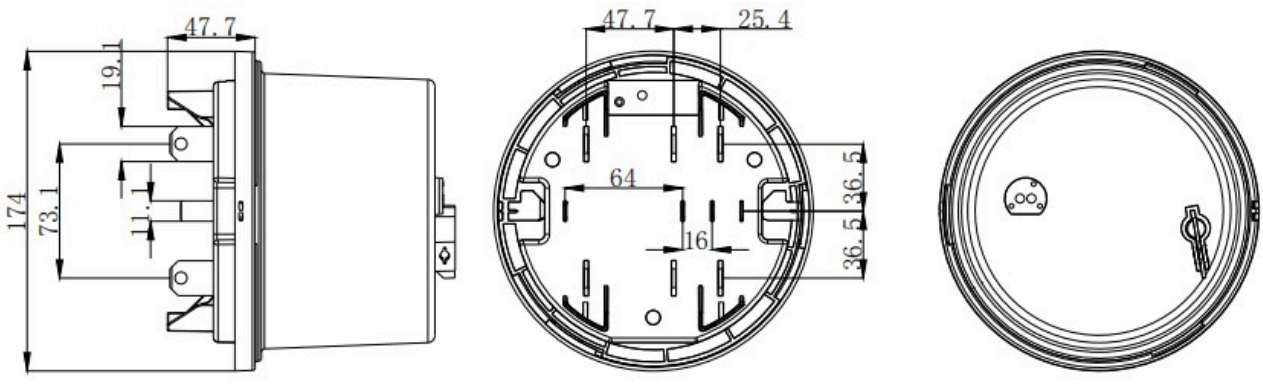
Technical specifications

Nominal Voltage	69 – 480 V
Current	Basic current: 2.5 A | Maximum current: 20 A
Frequency	60 Hz ± 5%
Accuracy Class	CA0.2
Real-Time Clock Accuracy	< 0.5 s / day
Battery	ER14250, 2 mm 2-pin JST plug
Operating Temperature	–40 °C to +85 °C
Humidity	0% to 100%, non-condensing
Enclosure protection	IP54

Electromagnetic immunity

ESD — Contact Discharge	8 kV
ESD — Air Discharge	15 kV
Fast Transient Burst Test	4 kV
Surge Immunity Test	6 kV
Electromagnetic RF Field	10 V/m (with current) | 30 V/m (without current)

Dimensions



Dimensions in millimetres. Drawing supplied for the corresponding Form 9S model.

Enclosure standard reference: UL50. Confirm the applicable configuration and compliance documentation with Archai.